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ABSTRACT

In academic libraries, neither technical services, public services, nor administration has escaped the impact of online information systems. Online catalogs, network systems, interlibrary lending, database searches, circulation control, automated technical processes, and an increasing number of non-book materials are part of a technological transition that will transform libraries into dynamic information centers. Library directors will still face pressures of accountability and new decisions for the most efficient use of computers within existing and new library operations. Budgets must include line items for retraining librarians. The issue of fees for services in database searching and interlibrary loan is critical, and assessment of the best methods for teaching patrons how to take advantage of this explosion of information means increased commitment of library resources and personnel. The library profession will assume a new identity as it incorporates the theories and practices of information science into graduate programs and existing libraries. Despite the applications of computer technology to library functions, however, what still remains is users, staff, and materials, the triad of past, present, and future libraries. Twenty-nine references are listed. (Author/LMM)

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The Shattered Stereotype: The Academic Library in Technological Transition

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ABSTRACT

THE SHATTERED STEREOTYPE: THE ACADEMIC LIBRARY IN TECHNOLOGICAL TRANSITION

Constance L. Foster, Western Kentucky University

None of the three traditional areas within the academic library--technical services, public services, administration --has escaped the impact of online information systems. Complex operations now exist in most libraries in one or more of these areas. The inevitable changes technology evokes will produce a new library environment, one that is truly an information center with a variety of materials in all formats rather than just a repository of books stacked in towers. The profession of librarianship will assume a new identity as it incorporates the theories and practices of information science into graduate programs and existing libraries. For all the applications of computer technology to the functions of a library, what still remains is users, staff and materials, the triad of libraries past, present, and future.

THE SHATTERED STEREOTYPE: THE ACADEMIC LIBRARY IN TECHNOLOGICAL TRANSITION

Constance L. Foster, Western Kentucky University

A "card" catalog of 500,000 entries in two 4" x 6" envelopes, an extensive bibliography compiled in twenty minutes, or a book location query in one second are tangible examples of the drastic, rapid changes occurring in academic libraries today. The much-touted information explosion, coupled with the daily advances in automation (nourished by the invention of the chip), continues to bewilder and challenge people with access to all kinds of facts, data and other informational needs. Yet academic librarians are no less amazed with the technology being applied to their work environment than were business persons who enjoyed these innovations several decades ago. What computers can do, how traditional jobs are modified, and what impact these two factors have on human resources all bear serious consideration for present library operations and for future planning. Donald Hammer makes the following observation:

> The decade has seen the union, in varying degrees, of communication technology, television, operations research, cybernetics, systems analysis, computer technology and management science with the library. It has seen the demise of the card catalog . . . the growth of the data base as a dynamic informational tool.[1]

Although we cannot dismiss the impact of external networks on individual library organizations, the wealth of information on this topic overshadows the real issue and the evolutionary phase that academic libraries are experiencing. The demise

of the card catalog and the rise of the data base, referred to by Hammer, are products of online systems in the library environment today. Since technological changes and access to information simply did not occur with such incredible speed twenty years ago, management and operations of academic libraries were still directed by librarians who followed a traditional diet of Cutter, Dewey, Fayol, and a touch of Drucker. Within the last ten to fifteen years, particularly with the distribution of machine-readable catalog copy by the Library of Congress and the formation of OCLC, the role of library directors in university settings and the nature and demands of the library itself have transcended traditional images as book repositories and non-political entities. Library personnel now face jobs which require different approaches and new levels of competency than existed before.

This use of technology in the administration of libraries and the effect that such technology has on information resources and services demand that those of us in the profession "be both selectively literate and multitechnology literate to take advantage of available information resources."[2] Development of such vast expertise presents a great challenge and possible source of endless frustration and/or excitement on a daily basis. Michael Gorman summarizes the influence of computers in this way:

> . . . automation is a powerful force operating on the library as a whole, bringing predictable and unpredictable changes in the nature of library processes, and implying a reconsideration of all our traditional ideas on how the library should be run and how the work should be allocated.[3]

None of the three typical areas within the library--technical services, public services, administration--has escaped online information systems. The example of the card catalog, the bibliography and the book query are direct results of complex internally and/or externally produced systems.

LIBRARY TECHNICAL SERVICES

In technical services, cataloging, acquisitions, processing, and serials functions can now be performed by commercial, in-house, or network systems. In most libraries, however, not all of these functions are fully activated. In any library where eighty percent (or more) of its cataloging is accomplished online via MARC tapes or other networking, the changes in support staff, professionals, and equipment become apparent. Fewer people actually complete more work in less time with a noticeable reduction in errors. As Susan K. Martin observes:

> Incorporation of on-line processing in the technical services area allows a magnificent opportunity to step back, take a fresh look, redesign procedures, and reorganize to use the personnel and equipment resources in the best possible manner.[4]

One library that attests to and exemplifies Martin's philosophy is Helm-Cravens Library of Western Kentucky University. The technical services area of cataloging utilizes an in-house system of communications and the MARC tapes. Elements of the new database are merged with the online circulation system to aid patrons in querying book locations. Ohio State University's library has also experienced similar

changes in procedures with their new tool being OCLC.[5]

Two other units within technical services are also being restructured, sometimes slowly. Acquisitions encompasses routine, repetitive, clerical tasks that involve ordering materials, receiving, accessioning, paying and checking invoices and accounting for departmental and library book budgets. With exciting changes and experiments among publishers in electronic data transmission and with library vendors or in-house programmers designing systems for acquisitions, the computer terminal is close by, if not prominent already. Software still remains a problem, however, especially for acquisitions and serials functions. Baker and Taylor, Brodart, Faxon, and Ebsco have been successful in small and medium-sized public libraries but when the software is applied to larger situations and irregularities, problems arise.

Virgil Massman foresees on-line access to publishers in lieu of the traditional modes in that one person will sit in front of a terminal rather than in front of voluminous Books in Print to verify and gather ordering information. In this situation the librarian's role will be to know and teach fully the means of exploiting the proliferation of data bases--a new level of expertise.[6] In the future, then, acquisitions librarians will seek alternative sources of materials through regional storage centers, interlibrary lending, or new collection development policies patterned after the spirit of the defunct Farmington Plan. Memberships in special groups such as the Center for Research Libraries will ease the budget crunch when highly specialized materials

can be borrowed rather than purchased. Yet patrons will grow increasingly impatient for such resource sharing if we depend on traditional mail services to retrieve items.

According to Mitsuko Collver, the advent of computers and online systems within a library means that a separate serials unit should be created, if one does not already exist.[7] Although Michael Gorman does not agree with the particular concept, many other library administrators feel that a centralized serials unit is effective, depending primarily on how library materials are ordered, received and cataloged. Some people contend that the external networking systems eliminate the need for a separate serials unit if all items are treated in similar ways before they reach the patron. Another problem, however, is fragmentation or a combination of systems within the technical services operation.

LIBRARY PUBLIC SERVICES

Equally challenging and evolutionary in public services is the appearance of the computer terminal, heralding service in the form of data base searches. One can amusingly project, at this point, a scenario of patron entering reference area and seeing a terminal on a desk with a sign below, "Have a question; ask me?" Circulation routines, interlibrary lending and book location queries are now comfortably linked with computer terminals for vital transactions and information. More terminals require fewer staff in all areas of the library.

Nowhere has the effect of computer-based information

systems been felt more strongly than in reference services where librarians are already becoming information brokers who formulate search strategies, conduct extensive interviews with patrons and enter key words into a terminal to produce bibliographic citations. For the patron, the terminal means time and money for information. The whole issue of charging user fees is a revolutionary concept in a profession known for free services. Controversy surrounds this aspect of library service not only as to whether fees should be assessed but also as to the status of librarians. K. J. McGarry views this change as a step toward deprofessionalism in that the stereotypical service-oriented librarian may become "the information technologist who unravels the mysteries of computerized searching for the client and obviously possesses esoteric knowledge denied to the lay person."[8] Librarians, then, are moving away from the custodial phase, as McGarry names it, to a relationship with users. Such a relationship necessitates intensive methods of assembling, organizing and making accessible documentary items not easily handled by traditional methods.[9]

Just as convincing--for professionalism--is the argument that the successful manipulation of data bases, producing high recall or high precision, and inspiring confidence in the systems, will command respect for librarians who now charge fees for services rendered, just as do lawyers and doctors. Alas, that this respect and those fees would enrich that librarian's life to parallel that of a doctor! The phenomenal proliferation of data bases and the information

that comprises them staggers one's confidence. Librarians who used to know every book in a collection or the exact location of books that are frequently requested by color rather than title now confront strategies for tying into 1,000 data bases in science and technology alone, or 528 bibliographic data bases with in excess of 70 million citations![10]

At Northwestern University in Illinois what began as an online circulation system has developed into a totally integrated system with the exception of an online catalog, which now has author/title access. NOTIS-3 survived several modifications and nightmares due to university computer changes to emerge as a successful in-house system. In addition to its circulation control, the system handles the library's shelflist, 28,000 serials and acquisitions functions. Patrons check out books at self-service circulation charge terminals and query cathode ray tubes for locations.[11]

For the University of Illinois at Urbana-Champaign, the online circulation system monitors due dates and generates overdues automatically. As a member of ILLINET, this university library finds that networking eliminates the need to verify titles, search lists of locations holdings for interlibrary lending, and complete forms. Thus the staff can plan better whether to order or borrow books. The strong interlibrary lending feature (UIUC is the fourth most active user) means that "no longer should interlibrary lending be viewed restrictively as a privilege for researchers, rather it may become a dynamic support vehicle for circulation."[12] Once again, the concept of document delivery faces redefinition as online systems

present alternatives to the usual approaches to library resources.

NETWORKING

One cannot discuss the technological transition of the academic library environment and its changing nature without mentioning networks as an external force acting upon and existing within many libraries. Even though not all university libraries participate in a formal network such RLIN, OCLC, or WLN, what these structures introduced to and imposed on libraries has caused

> . . . enormous change in a very short time. Change is not orderly. Myths, tradition, power, struggles, failures, competition for funding and status, rumors, progress, and just plan confusion and uncertainty are all part of the process.[13]

Library administrators have been slow, perhaps, in accepting networks because of governance, finance, and local autonomy. Yet for those academic libraries still outside an external, formal network, or one lacking automated systems for its daily operations, Patricia Battin describes four realities that these organizations must face if they are going to survive: (1) lack of internal/external capacities for effective cooperation, (2) inability for individual institutions to acquire and to house comprehensive book collections, (3) staggering preservation problems, and (4) need to insure free flow of information by understanding better the publishing companies.[14] To hide behind a stance of autonomy is simply not a justifiable excuse for remaining outside any systematic

exchange of information.

In a study by Wheelbarger and Clouse, the legality of networks and potential problems are considered. The researchers contend that eventually a national policy will be needed for library networks and information use. Of the thirty-three questionnaires they distributed and of the sixteen returned, no litigations were cited. Questions centered around the rights of a network to exclude certain materials or an author's works or to refuse an institution membership. Almost all of the responses indicated that networks should not exclude inforamtion.[15]

Recognizing networks as a positive force for change in academic libraries, Barbara Markuson envisions the following:

> . . . networking provides unparalleled opportunities for dramatic restructuring of the library as an operational unit and for an astounding array of new inforamtion services better designed to meet the needs of an increasingly complex user community.[16]

In order to reflect a truly dramatic, cohesive environment, library administrators and staff must rethink services and approaches to them, retrain, and redefine goals and objectives, and take a long, hard look at the organizational structure.

PERSONNEL CONSIDERATIONS

Just as no library can escape the influx of automation so no person involved in librarianship can avoid the unmistakable change in a once calm, predictable working place. Qualities and attitudes needed by people undergoing this technological transition center around flexibility and a desire to work

with computers and to share in decision-making processes. How well library staff are prepared to handle these changes and how well each person succeeds affect the entire operation and organization. This technology demands new roles, skills, and competencies for all workers.[17]

One of the early fears--unemployment--still remains active. Human obsolescene is as real today as is the outmoded ATS 2741 terminal. What becomes of the person whose sole responsibility for nine years now becomes a shared venture with fourteen people? There are other fears too: inability to acquire or maintain necessary skills, misuse of information, stress, and coded communication. In other words, "the impact of technology upon social structures or organization cannot be ignored."[18] It is tremendous!

On the more positive side, the intangible benefit for librarians aligned with a network, whether an internal system or formal arrangement, is that of professional satisfaction, the feeling that they are directly involved in a new wave of library technology.[19] Such a feeling extends to support staff as well. Those persons who used to be typists now redefine themselves, and rightly so, as computer operators.

Flextime, a concept introduced into business first, is a direct result of network problems or innovation. At Johns Hopkins University Library, the Serials Department tried flexible scheduling to make better use of OCLC availability with options such as a four-day work week. The overall result was "improved morale and a lessening of tensions . . . better work habits and attitudes."[20]

LIBRARY LEADERSHIP

A library that has experienced the growing pains of automation, innovation, and reorganization reflects a leadership of vision, confidence, and management skills. This type of library environment is dedicated to the needs of patrons and seeks change as an enriching and productive element in the reshaping of the library from a storehouse to a service center. Many library administrators, however, find themselves torn between the necessity for networking and resources sharing and the autonomy of independence in daily operations. Yet what is exciting for the organization which does use online systems is the flexibility achieved through such technology. This freedom, if we may call it that, allows librarians to concentrate on special projects, to improve approaches to bibliographic instruction and to utilize professional skills across the invisible line of efficiency/effectiveness.

In a business environment advertisers create images that are associated with corporations; the golden arches of McDonald's and the three-piece suits of IBM representatives are only two examples. Librarians, too, seek identity with their institutions. Indeed "they get their promotions for the tangible products provided for their own domains," observes Vern Pings.[21] Alignment with a network, sharing one's identity with thousands of other institutions, can present problems, real or perceived. Too many librarians are still having to justify, define, or relinquish faculty status so that little time is spent on presenting a new image.

The director of such a new environment in the latter decades of the twentieth century must be an astute politician, an assertive individual, and a master of communication with a tremendous energy level and commitment to serving the university community in the best ways possible. Ralph Daehn states that "it is necessary to know the intricate, detailed facts on every measurable aspect of library operation requisite to the justification of its existence and the effective management of library operations."[22]

ORGANIZATIONAL CHANGE: TWO EXAMPLES

Two academic libraries deserve recognition as specific examples of organizations changing with the times. As early as 1973, Columbia University library regrouped into three areas: resources, services, and technical support.[23] Even though many libraries still retain the duality of reader/technical services, functional organization is gaining more credibility than in previous decades. A striking prediction is the abolition of technical services as a major administrative subdivision. If this occurs, public services will apportion work into centralizd processing (non-professionals), professional groupings around subjects, cataloging, collection development, reader services, bibliographic instruction and professional bibliographers with the third group being centralized library management.[24] Michael Gorman comments:

> It is impossible to imagine a major restructuring of technical services which does not imply a rethinking of all the library's processes and services . . . the strict division between technical and public services will be eroded in the near future.[25]

The Educational Resources Center at Clarkson College, Potsdam, New York, is one example of a modern computer library. This media center serves a college community which specializes in science and technology. Clarkson has not abandoned books in favor of computers; "it's a center with a library component and a computer component and a television or audiovisual component all in symbiotic relationship."[26] The Clarkson "library" does underscore one inevitable trend: the future library organization will be a central repository of computer storage, microformatted items, video disks, cable television, software for personal computers or for use at the library, journals accessed only by terminals and a host of other types of information. The challenge of keeping stored information continuously available is one that Clarkson intends to meet.[27]

CONCLUSION

Where then is this transition leading the librarians and the library in a university community? For librarians, the undeniable element of automation and information systems means that the worlds of books and computers must be merged; skills must be acquired in order to meet effectively the future information needs of a new, more sophisticated library patron and a different library organization. The blending of technology and intellectual content means that librarians must be generalists and specialists in subject areas and technological fields. The move involves one "from isolation to involvement, and from theory to practice, to realize the objectives of society."[28]

The future of librarianship amidst this technology is exciting and sobering. The very real possibility exists that the term "librarian" will become obsolete and be replaced by "information specialist." With this nominal change the stereotype of today will then be shattered and a prototype for the twenty-first century will subtly emerge as information specialists staff information centers. We will no longer be librarians, keepers of books.

Online catalogs, network systems, interlibrary lending, data base searches, circulation cotnrol, automated technical processes, and an increasing number of non-book materials are gradually hurtling us into a twenty-first century when this technological transition will be completed and the library of that new era will emerge as a dynamic center of information. This metamorphosis, paradoxically, supports a succinct, philosophical statement formulated over fifty years ago be Shiyali Ranganathan: "Library is a growing organism . . . but the vital principle of the library . . .is that it is an instrument of universal education, and assembles together and freely distributes all the tools of education and disseminates knowledge with their aid."[29]

Within this growing organism, library directors will still face pressures of accountability, and librarians will constantly reassess ways of meeting patron needs more effectively. New decisions face library administrators for the most efficient use of computers within existing and new library operations. Budgets must include line items for retraining librarians through conferences, workshops, and seminars. The issue

of fees for services in database searching and interlibrary loans is critical. Finally, assessment of the best methods for teaching patrons how to find this explosion of information means a new level of commitment of library resources and personnel. Yet the expression "the more we change, the more we stay the same" rings true for the near future. Despite all the applications of computer technnology to the functions of a library and despite all the evolutionary processes at work today, what still remains fundamental is users, staff, and materials--the triad of libraries past, present, and future.

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